

### Listing of Claims:

1. (Currently Amended) A method for checking of data in communication between a transmitting device and a receiving device, the method comprising:  
~~characterized in that~~

[[~~-~~]] calculating a first reference value (204) ~~is calculated (203)~~ at least partly based on a first error check value (205) calculated from the data and a first authentication value (202) for the data; and

[[~~-~~]] transmitting said first reference value from said transmitting device to said receiving device.

2. (Currently Amended) A The method according to claim 1, further comprising the steps of: ~~characterized in that when checking the data~~

[[~~-~~]] calculating a second error check value (303) ~~is calculated~~ from the data[[~~,,~~]];

[[~~-~~]] deriving a second authentication value (302) ~~is derived~~ for the data[[~~,,~~]];

[[~~-~~]] calculating a second reference value ~~is calculated~~ at least partly based on a first and a second value from the a set of said second error check value, said second authentication value and said first reference value[[~~,,~~]]; and

[[~~-~~]] comparing said second reference value ~~is compared (305)~~ with a third value from the set of said second error check value, said second authentication value and said first reference value.

3. (Currently Amended) A The method according to claim 1, characterized in that wherein the data is in the form of comprises packets to be which is sent from a transmitter to a receiver and said first reference value is added to ~~the a~~ packet ~~to be~~ which is sent.

4. (Currently Amended) A The method according to claim 3, characterized in that wherein the data is to be sent in a cellular system.

5. (Currently Amended) A The method according to claim 1, characterized in that

wherein said calculation is performed with ~~the~~ an exclusive-OR function.

6. (Currently Amended) A The method according to claim 2, ~~characterized in that~~ wherein said first and second authentication values (202; 302) are derived at least partly based on a secret key.

7. (Currently Amended) A The method according to claim 3, ~~characterized in that~~ wherein said first authentication value (202) is derived at least partly based on a packet number.

8. (Currently Amended) A The method according to claim 3, ~~characterized in that~~ wherein said first authentication value (202) is derived at least partly based on ~~the~~ a direction of the packet ~~to be~~ which is transmitted.

9. (Currently Amended) A The method according In claim 2, ~~characterized in that~~ wherein said first and second error check values are CRC values (205; 303; 304).

10. (Currently Amended) A The method according to claim 2, ~~characterized in that~~ wherein said first and second authentication values are calculated at least partly based on the data.

11. (Currently Amended) A transmitter, ~~characterized in that the transmitter comprises~~ comprising:

[[ - ]] means for deriving an authentication value (202) from the data to be transmitted (201) [[ , ]];

[[ - ]] means for deriving an error check value (205) from the data to be transmitted (201); and

[[ - ]] means for combining said authentication value (202) and said error check value (205) with a logical function for producing a first reference value (204).

12. (Currently Amended) A The transmitter according to claim 11, ~~characterized in that~~ wherein said logical function is exclusive-OR (203).

13. (Currently Amended) A receiver for receiving data having means for checking received data, ~~characterized in that the receiver comprises~~ said receiver comprising:

[[ - ]] means for deriving a first reference value (308) from the received data[[,]]; and

[[ - ]] means for calculating an error check value (303) from the received data[[,]]; and

[[ - ]] means for denying an authentication value (302) for the received data[[,]]; and

[[ - ]] means for calculating a second reference value at least partly based on a first and a second value from ~~the~~ a set of said error check value, said authentication value and said first reference value[[,]]; and

[[ - ]] means for comparing said second reference value with a third value from the set of said error check value, said authentication value and said first reference value.

14. (Currently Amended) A The receiver according to claim 13, ~~characterized in that~~ wherein the receiver is arranged to ~~carry out the~~ perform a logical function exclusive-OR (203).

15. (Currently Amended) A mobile station, comprising: ~~a transmitter and a receiver,~~ characterized in that the transmitter comprises

a transmitter that comprises:

[[ - ]] means for deriving a first authentication value (202) from ~~the~~ data to be transmitted (201)[[,]]; and

[[ - ]] means for deriving a first error check value (205) from the data to be transmitted (201); and

[[ - ]] means for combining said first authentication value (202) and said first error check value (205) with a logical function for producing a first reference value (204)[[,]]; and ~~the receiver comprises~~

a receiver that comprises:

[[ - ]] means for deriving a first reference value (308) from the received data[ , ];

[[ - ]] means for calculating a second error check value (303) from the received data[ , ];

[[ - ]] means for deriving an authentication value (302) for the received data, ~~this~~ said authentication value being a second authentication value[ , ];

[[ - ]] means for calculating a second reference value at least partly based on a first and a second value from ~~the~~ a set of said second error check value, said second authentication value and said first reference value[ , ]; and

[[ - ]] means for comparing said second reference value with a third value from the set of said second error check value, said second authentication value and said first reference value.

16. (Currently Amended) ~~A~~ The station according to claim 15, ~~characterized in that~~ wherein the mobile station (101) is arranged to ~~carry out~~ perform the logical function exclusive-OR (203).

17. (Canceled)

18. (Canceled)